

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF OHIO
WESTERN DIVISION**

MICHAEL F. ABRAMS, <i>et al.</i>,	:	
	:	
Plaintiffs,	:	CASE NO. 3:13-cv-00137
	:	
v.	:	JUDGE JACK ZOUHARY
	:	
NUCOR STEEL MARION, INC.,	:	
	:	
Defendant.	:	

**MEMORANDUM IN SUPPORT OF DEFENDANT NUCOR STEEL MARION, INC.'S
MOTION TO EXCLUDE EXPERT TESTIMONY**

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TABLE OF CONTENTS

TABLE OF AUTHORITIES	iv
INTRODUCTION	1
LAW AND ARGUMENT	1
I. THE COURT SHOULD EXCLUDE THE UNRELIABLE, VAGUE, AND CONCLUSORY OPINIONS OF DR. JONATHAN RUTCHIK	1
A. Dr. Rutchik’s Opinion That There Is An Alleged Harm To Human Health Is Not Reliable.....	4
1. Ohio Requires Evidence of General and Specific Causation.....	5
2. Dr. Rutchik Did Not Consider Contrary Evidence and Did Not Rule Out Alternative Explanations	8
3. Dr. Rutchik Fails to Address the Type or Degree of Purported Harm To Any Specific Person or Property	9
4. Dr. Rutchik’s Focus on Average Damages Is Flawed	9
B. Dr. Rutchik’s Proposed Testimony Is Not Sufficiently Connected to the Facts of the Case	11
C. Dr. Rutchik’s Opinion Fails the Reliability Standards in Fed. R. Evid. 702	12
1. <i>The EPA’s Reference Concentration</i>	12
2. Dr. Rutchik Relies on Scientific Studies That Do Not Fit.....	14
a. Kim, <i>et al.</i> (2011), Motor function of adults of an Ohio community with environmental manganese exposure	14
b. Haynes, <i>et al.</i> (2010), Environmental manganese exposure in residents living near a ferromanganese refinery in Southeastern Ohio	15
c. Bowler, <i>et al.</i> (2012), Anxiety affecting Parkinsonian outcome and motor efficiency in adults of an Ohio community with environmental airborne exposure	15
d. Willis, <i>et al.</i> (2010), Metal emissions and urban incident Parkinson disease: A community study of Medicare beneficiaries by using geographic information systems	16
e. Rugless, <i>et al.</i> (2014), Childhood exposure to manganese and postural instability in children living near a ferromanganese refinery in southeastern Ohio.....	18
f. Lucchini, <i>et al.</i> (2007), High prevalence of Parkinsonian disorders associated to manganese exposure in the vicinities of ferroalloy industries.....	20

g.	Lucchini, <i>et al.</i> (2012), Tremor, olfactory, and motor changes in Italian adolescents exposed to historical ferromanganese emission.....	21
h.	Lucchini, <i>et al.</i> (2014), Neurofunctional dopaminergic impairment in elderly after lifetime exposure to manganese.....	22
D.	Dr. Rutchik’s Opinion Rests on Alleged Damages That Are Now Time-Barred.....	24
II.	THE COURT SHOULD LIMIT THE TESTIMONY OF PLAINTIFFS’ EMISSIONS EXPERT, LANCE TRAVES	25
A.	Traves’s Belated Deposition Opinions Should Be Excluded	25
1.	Plaintiffs’ Failure to Disclose Traves’s Budding New Opinions Was Not Justified or Harmless.....	28
B.	Traves’s Unqualified, Speculative, and Unreliable Deposition Opinions Should Be Excluded Under Fed. R. Evid. 702 and the Gatekeeper Requirements of <i>Daubert</i>	29
1.	Traves Is Unqualified to Render Health-Based Opinions.....	30
2.	Traves Is Unqualified to Offer Physical Property Damage Opinions	31
C.	Traves’s Methodology Used to Select the Data Underlying the AERMOD Dispersion Model Is Patently Speculative and Unreliable	32
D.	Traves’s Opinions Related to the Ohio EPA’s Beliefs and Conclusions Go Beyond the Permissible Scope of Expert Testimony and Should Be Excluded	35
III.	THE COURT SHOULD EXCLUDE THE TESTIMONY OF PLAINTIFFS’ REAL ESTATE EXPERT, CRAIG CANTRALL	36
A.	Cantrall’s Opinion Rests on Nothing More Than His <i>Ipse Dixit</i>	37
B.	Stigma Damages Are Not Recoverable in Ohio	38
	CONCLUSION.....	39

TABLE OF AUTHORITIES

Cases	Page(s)
<i>Amorgianos v. Nat'l R.R. Passenger Corp.</i> , 303 F.d 256, 270 (2d Cir. 2002).....	2
<i>Amorglianos v. Nat'l R.R. Passenger Corp.</i> , 137 F. Supp. 2d 147 (E.D.N.Y. 2001)	18
<i>Bailey v. United States</i> , No. 3:12cv02545, 2015 U.S. Dist. LEXIS 97288 (N.D. Ohio July 27, 2015).....	7
<i>Baker v. Chevron USA, Inc.</i> , 533 F. App'x 509 (6th Cir. 2013)	8, 10, 11, 13
<i>Banford v. Aldrich Chem. Co., Inc.</i> , 932 N.E.2d 313 (Ohio 2010)	9
<i>Barrett v. Rhodia, Inc.</i> , 606 F.3d 975 (8th Cir. 2010)	1
<i>Berry v. Crown Equip. Corp.</i> , 108 F. Supp. 2d 743 (E.D. Mich. 2000).....	7
<i>Brown v. Whirlpool Corp.</i> , 996 F. Supp. 2d. 623 (N.D. Ohio 2014).....	38
<i>Buffonge v. The Prudential Insurance Co.</i> , 426 F.3d 20 (1st Cir. 2005).....	2
<i>Burgett v. Troy-Bilt LLC</i> , 579 F. App'x 372 (6th Cir. 2014)	29
<i>Castellow v. Chevron</i> , 97 F. Supp. 2d 780 (S.D. Texas 2000).....	34
<i>Colegrove v. Fred A. Nemann Co.</i> , 1st Dist. Hamilton No. C-140141, 2015-Ohio-533.....	9
<i>In re Commercial Money Ctr.</i> , 737 F. Supp. 2d 815, 849 (N.D. Ohio 2010).....	35
<i>Cooley v. Lincoln Elec. Co.</i> , 693 F. Supp. 2d 767 (N.D. Ohio 2010).....	28
<i>Daubert v. Merrell Dow Pharm., Inc.</i> , 509 U.S. 579 (1993).....	<i>passim</i>

<i>Dickenson v. Cardiax & Thoracic Surgery of E. Tenn.</i> , 388 F.3d 976 (6th Cir. 2004)	25
<i>Gates v. Rohm & Haas Co.</i> , 655 F.3d 255 (3d Cir. 2011).....	10, 11, 13
<i>Gen. Elec. Co. v. Joiner</i> , 522 U.S. 136 (1997).....	14, 37
<i>Hamilton v. Menard, Inc.</i> , No. 3:10-CV-1997, 2012 U.S. Dist. LEXIS 139519 (N.D. Ohio Sept. 27, 2012)	29
<i>Henke v. Arco Midcon, LLC</i> , No. 10-cv86, 2014 U.S. Dist. LEXIS 31810 (E.D. Mo. Mar. 12, 2014)	9
<i>Kumho Tire Co., Ltd. v. Carmichael</i> , 526 U.S. 137 (1999).....	1
<i>LaBauve v. Olin Corp.</i> , 231 F.R.D. 632 (S.D. Ala. 2005)	10
<i>Leese v. Lockheed Martin Corp.</i> , 6 F. Supp. 3d 546, 558 (D.N.J. 2014)	38
<i>Linde v. Arab Bank, PLC</i> , 920 F. Supp. 2d 282 (E.D.N.Y. 2011)	35
<i>In re Meridia Prod. Liab. Litig.</i> , 328 F. Supp. 2d 791 (N.D. Ohio 2004).....	8
<i>Nelson v. Tenn. Gas Pipeline Co.</i> , 243 F.3d 244 (6th Cir. 2001)	23
<i>Nieman v. NLO, Inc.</i> , 108 F.3d 1546 (6th Cir. 1997)	24
<i>Player v. Motiva Enters., LLC</i> , 240 F. App'x 513 (3d Cir. 2007)	38
<i>Pluck v. BP Oil Pipeline Co.</i> , 640 F.3d 671 (6th Cir. 2011)	1, 5, 6, 37
<i>Pride v. BIC, Corp.</i> , 218 F.3d 566 (6th Cir. 2000)	7
<i>Ramirez v. Akzo Nobel Coatings, Inc.</i> , 791 N.E.2d 1031 (Ohio Ct. App. 2003).....	38

<i>In re Rezulin Prods. Liab. Litig.</i> , 309 F. Supp. 2d 531 (S.D.N.Y. 2004).....	35
<i>In re Scrap Metal Antitrust Litig.</i> , 527 F.3d 517 (6th Cir. 2008)	32
<i>Smelser v. Norfolk S. R.R. Co.</i> , 105 F.3d 299 (6th Cir. 1997)	7, 29, 30
<i>Tamraz v. Lincoln Elec. Co.</i> , 620 F.3d 665 (6th Cir. 2010)	6, 7, 24
<i>Terry v. Caputo</i> , 875 N.E.2d 72 (Ohio 2007)	5
<i>Trimbur v. Norfolk Southern Ry.</i> , No. 2:13-cv-0160, 2015 U.S. Dist. LEXIS 104803 (S.D. Ohio Aug. 10, 2015)	6
<i>In re Welding Fume Prods. Liab. Litig.</i> , No. 1:103-CV-17000, 2005 U.S. Dist. LEXIS 46164 (N.D. Ohio Aug. 8, 2005)	30, 31, 32
<i>Wolf v. BMW NA, LLC</i> , Case No. CGL-12-520316 (Sup. Ct. Cal. Mar. 20, 2014), (App. 490-493)	2
<i>Younglove v. PSD Dev., LLC</i> , 782 F. Supp. 2d 457 (N.D. Ohio 2011).....	38

STATUTES & OTHER AUTHORITIES

Fed. R. Civ. P. 26.....	25, 28
Fed. R. of Civ. P. 37.....	25
Fed. R. Evid. 702	<i>passim</i>
OHIO REV. CODE § 2305.09	24

INTRODUCTION

This is a toxic-tort lawsuit premised upon alleged acts of trespass and nuisance. Plaintiffs Randall Bush and Ronald Tolle claim to have been damaged by Defendant Nucor Steel Marion, Inc.'s emission of purportedly harmful levels of manganese. To prove their case, Plaintiffs intend to rely on expert testimony from a neurologist, an environmental permitting specialist, and a real estate broker. For separate and distinct reasons set forth below, the opinions of all three witnesses fail the admissibility standards of *Daubert* and Fed. R. Evid. 702.

LAW AND ARGUMENT

When considering expert testimony, the Court must act as “a gatekeeper, ensuring that any and all scientific testimony or evidence admitted is not only relevant, but reliable.” *Pluck v. BP Oil Pipeline Co.*, 640 F.3d 671, 677 (6th Cir. 2011). That requires the Court to consider “whether the reasoning or methodology underlying the testimony is scientifically valid.” *Id.* With non-scientific expert testimony, the Court’s gatekeeping role is the same. *See Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. 137, 147 (1999).

Plaintiffs, as the “part[ies] offering the expert testimony[.]” must show “by a preponderance of the evidence both that the expert is qualified to render the opinion and that the methodology underlying his conclusions is scientifically valid.” *Barrett v. Rhodia, Inc.*, 606 F.3d 975, 980 (8th Cir. 2010). Here, Randall Bush and Ronald Tolle cannot meet their evidentiary burden for any of their three experts.

I. THE COURT SHOULD EXCLUDE THE UNRELIABLE, VAGUE, AND CONCLUSORY OPINIONS OF DR. JONATHAN RUTCHIK.

Dr. Rutchik’s novel theory that **all** “persons who reside full time in the ‘class area’ for a period of ten years or more will suffer harm to their health caused by such chronic exposure to such elevated levels of manganese” is biased, conclusory, untested, and contrary to

relevant community studies on the same topic. [Rutchik Report 3, Appendix to Memorandum in Support of Motion to Exclude Expert Testimony (“App.”) 3.] Dr. Rutchik’s theory and methodology noticeably fail to satisfy the factors established pursuant to Fed. R. Evid. 702 and *Daubert*. Thus, Dr. Rutchik’s opinion is unreliable and his testimony inadmissible.

Indeed, Plaintiffs rely solely on Dr. Rutchik, a frequent legal consultant whose opinions have often been stricken under *Daubert* or state-court equivalents as being **unscientific and unworthy of jury consideration**.¹ Dr. Rutchik’s methodology in determining causation is based on a non-compliant *Daubert* subjective belief and unsupported speculation, which precludes his opinions. A medical causation expert utilizing precepts of science and medicine to attribute cause must be able to identify a science-based methodology by which he or she can, for a given individual, rule out an idiopathic cause in favor of the alleged chemical cause. Dr. Rutchik admittedly does not do so; he does not even try.

Dr. Rutchik opines that every Plaintiff residing within a quarter to one half-mile of the Nucor Marion facility, who has lived there for over ten years, *will* suffer adverse health effects—without ever speaking to a Plaintiff; without reviewing or taking a medical history; without requesting or evaluating blood or urine samples demonstrating whether there are any measurable levels of manganese; without conducting a neurological assessment of any kind; and without

¹ See *Buffonge v. The Prudential Insurance Co.*, 426 F.3d 20, 29 (1st Cir. 2005) (**finding that Dr. Rutchik’s report suffered from fundamental flaws and that its mischaracterizations were material**); *Amorgianos, v. Nat’l R.R. Passenger Corp.*, 303 F.d 256, 270 (2d Cir. 2002) (**finding that the medical literature cited by Dr. Rutchik failed to fit the facts of the case, either in terms of type or duration of exposure, and that he prepared his report for litigation rather than as part of his academic research**); *Wolf v. BMW NA, LLC*, Case No. CGL-12-520316 (Sup. Ct. Cal. Mar. 20, 2014), (**in tossing out the lawsuit, the court found that Dr. Rutchik failed to offer an opinion as to the duration that caused the alleged damage, nor did he offer any reasonable opinion on specific causation**) (App. 490-493).

analyzing anyone's individual exposure to workplace manganese. [Deposition of Jonathan Rutchik ("Rutchik Dep.") 19:4-22:9, App. 354-55.]

Because he utterly fails to apply his own methodology reliably, Dr. Rutchik cannot identify a single individual who has incurred any harm to his or her health.

Q. As we sit here today, you cannot identify a single individual that has incurred any harm to their health, is that correct?

....

A. That is absolutely correct.

[Rutchik Dep. 30:3-6, App. 357.] Further demonstrating the flaw in Dr. Rutchik's reasoning, both Plaintiffs in this case, Randall Bush and Ronald Tolle, have resided in the area for over 36 and 18 years respectively, and neither has identified any health issues that they or anyone else relates to manganese. [Deposition of Randall Bush ("Bush Dep.") 7:8-10, 39:10-12, App. 309-10, 317; Deposition of Ronald Tolle ("Tolle Dep.") 7:11-13, 46:23-47:4, App. 333, 343.] Thus, it is not surprising that Dr. Rutchik's expert report and testimony is devoid of any opinion that the two initial bellwether Plaintiffs *actually suffered* any harm. Indeed, Dr. Rutchik fails to include any of these variables or to consider anything about Plaintiffs' unique dose and duration of the purported manganese as it relates to their persons and properties. Therefore, in connection with these proceedings, Dr. Rutchik's opinion—that every person residing within a defined area around the Nucor Marion facility will suffer adverse health effects—is not only flawed, it is insufficient to establish causation.

Instead of conducting any testing, Dr. Rutchik creates a composite profile of a fictional "average" resident, who lives at an indeterminate location in Marion. Dr. Rutchik then opines about that person's exposure. Thus, his assumption posits that every single resident has "the

exact same exposure, regardless of where the [person] is located[,]” where he works, or how often he is within the confines of the defined area. [Rutchik Dep. 89:6-90:1, App. 371-72.]

In Dr. Rutchik’s self-serving and limited view, long-term manganese exposure over 0.05 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) (the U.S. EPA’s reference concentration level for manganese) is “harmful to human health.” [Rutchik Dep. 93:7-16, App. 372.] But, as explained below, this view is completely unfounded. The EPA’s reference concentration by definition does not set a level of exposure above which adverse health effects are expected. For all of these reasons, and those more fully set forth below, the Court should exclude Dr. Rutchik’s causation opinion.

A. Dr. Rutchik’s Opinion That There Is An Alleged Harm To Human Health Is Not Reliable.

In accordance with the Supreme Court’s directive in *Daubert*, this Court acts as a gatekeeper to “ensure that any and all scientific testimony or evidence admitted is not only relevant, but reliable.” *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 589 (1993); *see also* FED. R. EVID. 702. The analysis implicitly requires that the testimony be grounded “in the methods and procedures of science” and be “more than subjective belief or unsupported speculation.” *Daubert*, 509 U.S. at 590. In evaluating the relevance of the proffered testimony, also described as “fit,” the court must conduct “a preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts at issue.” *Id.* at 592-93.

Here, Dr. Rutchik’s methodology is flawed. First, Ohio law does not permit the sort of fictional, composite opinion Dr. Rutchik offers. Instead, he was required to tailor his analysis to specific individuals and their properties. Absent a finding of specific causation, the record fails to show that the alleged manganese at issue caused any damage to Plaintiffs’ property or

interfered with their property rights or their use and enjoyment of the same. Moreover, Dr. Rutchik says nothing about extrapolating his conclusions to residences that were exposed to anything other than the “average manganese ambient air concentration” from another expert’s flawed modeling. [Rutchik Dep. 89:6-90:1, App. 371-72.] Dr. Rutchik’s opinions rely on the accuracy of Lance Traves’s calculations but, as shown below, those calculations are not a creature of science, but of guesswork and unreasonable assumptions created to skew calculations to maximize exposures.²

1. Ohio Requires Evidence of General and Specific Causation.

Plaintiffs’ likely suggestion that this is not a toxic-tort case would be disingenuous. This is inescapably a toxic-tort case premised upon alleged nuisance and trespass. “In a toxic-tort case, . . . the plaintiff must establish *both* general and specific causation through proof that the toxic substance is capable of causing, and did cause, the plaintiff’s alleged injury.” *Pluck*, 640 F.3d at 676-77 (emphasis added); *see also Terry v. Caputo*, 875 N.E.2d 72, 77 (Ohio 2007) (“To present a prima facie case involving an injury caused by exposure to...[a] toxic substance, a claimant must establish (1) that the toxin is capable of causing the medical condition or ailment (general causation), and (2) that the toxic substance in fact caused the claimant’s medical condition (specific causation).”). “As to specific causation, the plaintiff must show that she was exposed to the toxic substance and that the level of exposure was sufficient to induce the complained-of medical condition (commonly called a dose-response relationship).” *Pluck*, 640 F.3d at 676-77.

² Dr. Rutchik’s report discusses soil tests that Lance Traves conducted. However, Dr. Rutchik admitted that, in forming his opinion, he did *not* consider any soil data. [Rutchik Dep. 76:22-25, 85:3-20, App. 368, 370.] Accordingly, should Dr. Rutchik somehow be permitted to testify at all, he should not be permitted to testify about any supposed adverse health effects that may result from exposure to alleged elevated levels of manganese contained in those soil samples.

In a desperate attempt to allow Dr. Rutchik to render an opinion, Plaintiffs will likely argue, without any support, that there is no necessity to offer a specific causation opinion, but they are wrong.³ Without expert testimony on both general causation and specific causation, a claimant cannot establish his or her prima facie case. *Id.* at 675.

In evaluating whether a specific causation analysis is reliable, the Sixth Circuit considers three factors: (1) Did the expert make an accurate diagnosis of the nature of the disease? (2) Did the expert reliably rule in the possible causes of it? and (3) Did the expert reliably rule out the rejected causes? *Tamraz v. Lincoln Elec. Co.*, 620 F.3d 665, 674 (6th Cir. 2010). If the answer to any of these questions is “no,” the Court must exclude the ultimate conclusion reached. *Id.* Considering those questions, Dr. Rutchik’s opinion should be excluded as a matter of law. Not only did Dr. Rutchik fail to demonstrate that he made an accurate diagnosis of the claimed harm, but he expended no effort to “rule in” or “rule out” manganese exposure as a possible cause of harm. [Rutchik Dep. 36:10-37:1, App 358.] His opinion turns on speculation and not a valid methodology.⁴ In particular, Dr. Rutchik’s hypothesis concerning the relationship between manganese exposure and Parkinson’s disease is also based on speculation and unreliable principles and methods as required by Fed. R. Evid. 702, as further demonstrated by his failure to conduct any testing whatsoever.

³ To recover damages for nuisance, negligence must be averred and proven. Ohio courts hold that actions for nuisance and negligence merge. *Trimbur v. Norfolk Southern Ry.*, No. 2:13-cv-0160, 2015 U.S. Dist. LEXIS 104803, at *29-30 (S.D. Ohio Aug. 10, 2015) (finding that a negligence claim must be supported by general and specific causation”).

⁴ Dr. Rutchik did not even ascertain Plaintiffs’ levels of alleged manganese exposure, nor did he identify the purported length of exposure. Moreover, he was unable to identify a demarcation when manganese exposure becomes harmful or will cause adverse health effects. [Rutchik Dep. 103:1-104:22, App. 375.] Absent some reasonable methodology, his opinion that every individual within the inner isopleth will suffer adverse health effects is unreliable.

Where “the proffered expert has performed no reliable testing of his theory, courts, including the Sixth Circuit, have routinely precluded the witness from offering an expert opinion.” *Berry v. Crown Equip. Corp.*, 108 F. Supp. 2d 743, 754 (E.D. Mich. 2000) (citing, *inter alia*, *Pride v. BIC, Corp.*, 218 F.3d 566, 578 (6th Cir. 2000) (finding that expert’s theory was unsupported by reliable testing)); *Smelser v. Norfolk S. R.R. Co.*, 105 F.3d 299, 304-05 (6th Cir. 1997) (reversing denial of motion to exclude where expert failed to perform any testing)). Even though Dr. Rutchik acknowledges that such testing is feasible and appropriate to determine health concerns or diagnoses, he conducted no testing or experimentation here:

Q: And you have performed no testing to confirm your hypothesis that there is an exposure point; is that correct?

....
A: That is true. I have not performed any testing to confirm a hypothesis, that’s correct....

....
Q: You have done nothing to prove your conclusions that you have rendered, is that correct, sir?

....
A: That’s correct.

[Rutchik Dep. 85:21-86:2; 86:22-25; 131:5-6 (“I didn’t measure anything in my study. I didn’t perform a study.”), App. 370-71, 382.]

Dr. Rutchik provides a conclusion based on specific causation although his report contains only a general causation analysis. His opinions and conclusions are not based on testing that can be reviewed for reliability and are, at best, speculative. *Tamraz*, 620 F.3d at 677-78 (“[W]hat science treats as a useful but untested hypothesis the law should generally treat as inadmissible speculation.”); *Bailey v. United States*, No. 3:12cv02545, 2015 U.S. Dist. LEXIS 97288, at *16 (N.D. Ohio July 27, 2015) (quoting *Tamraz* to exclude expert testimony, the court provided that an “expert’s hypothesis concerning the relationship between manganese exposure

and Parkinson's disease, albeit plausible, relied on speculation and was not the product of reliable principles and methods").

2. *Dr. Rutchik Did Not Consider Contrary Evidence and Did Not Rule Out Alternative Explanations.*

The Court should evaluate whether an expert has accounted for obvious alternative explanations. If the relevant scientific literature contains evidence tending to refute the expert's theory, and the expert does not acknowledge or account for that evidence, the expert's opinion is unreliable. *See In re Meridia Prod. Liab. Litig.*, 328 F. Supp. 2d 791, 800 (N.D. Ohio 2004). Here, Dr. Rutchik has neglected to perform a differential diagnosis, a theory by which experts identify the cause of a health problem by eliminating likely causes until the most probable one is isolated and easily identified. [Rutchik Dep. 30:9-31:3, App. 357.] Rather, Dr. Rutchik opines that persons living within the class area for ten years or more will suffer harm without accounting for other critical potential contributing factors. When asked to describe the specific harm that these individuals have suffered or will suffer, Dr. Rutchik simply points to the literature cited in his report and states that those studies show an increased risk of neurobehavioral abnormalities and Parkinson's Disease or Parkinsonism. [*Id.* at 29:1-19, App. 356.] *See Baker v. Chevron USA, Inc.*, 533 F. App'x 509, 525 (6th Cir. 2013) (**stating that literature cannot be a substitute for individualized exposure data**). But Dr. Rutchik himself indicates that the harm is conjectural and that he performed no further investigation or testing. [Rutchik Dep. 34:22-23, App. 358 ("There may very well be other reasons that contribute to neurobehavioral changes or an increased risk of Parkinsonism...").] Thus, the potential for error in Dr. Rutchik's theory due to his failure to perform a differential diagnosis and failure to rule out other causes is fatal to his causation analysis. For these reasons alone, Dr. Rutchik's

testimony is not the product of reliable principles and methods or actual application to the facts of this case as required by Fed. R. Evid. 702, making this expert testimony inadmissible.

3. *Dr. Rutchik Fails to Address the Type or Degree of Purported Harm To Any Specific Person or Property.*

Plaintiffs' claims for trespass and nuisance fail unless their damages are substantial and they demonstrate physical discomfort. *See, e.g., Banford v. Aldrich Chem. Co., Inc.*, 932 N.E.2d 313, 317 (Ohio 2010) ("For there to be an action for nuisance, the injury must be real, material, and substantial."); *Colegrove v. Fred A. Nemann Co.*, 1st Dist. Hamilton No. C-140141, 2015-Ohio-533, ¶ 36 ("[W]hen a party seeks to recover damages for . . . an indirect trespass, the damages must be substantial."). In this case, Dr. Rutchik's opinion—that people who live in the Class Area for ten years or more "will suffer harm to their health"—discusses neither the specific injuries at issue nor their severity. Plainly, Dr. Rutchik has not "rendered an opinion on the type or degree of harm that individuals will suffer," because he can't. [Rutchik Dep. 18:14-23, App. 354.]

Absent these factors, Dr. Rutchik's opinion cannot establish the necessary element of substantial damage. Dr. Rutchik opines that people have suffered harm, but he leaves everyone guessing about what exactly that harm is, as well as its extent. Since no other evidence proves that the alleged damage is real, material, and substantial, Dr. Rutchik's testimony would only confuse—not help—the jury and it should be excluded.

4. *Dr. Rutchik's Focus on Average Damages Is Flawed.*

This is not a class action. It is a bellwether trial between two plaintiffs and one defendant. Dr. Rutchik's opinion about non-specific harm to an average person living somewhere in the Class Area has no place here. Indeed, courts typically refuse to certify mass-tort classes precisely because of the many individualized questions involved. *See, e.g., Henke v.*

Arco Midcon, LLC, No. 10-cv86, 2014 U.S. Dist. LEXIS 31810, at *49 (E.D. Mo. Mar. 12, 2014) (“Individualized proof of contamination (injury), causation, and damages would be necessary for the negligence and trespass counts pled against Defendants here.”); *LaBauve v. Olin Corp.*, 231 F.R.D. 632, 673 (S.D. Ala. 2005) (“Whether a plaintiff’s property is contaminated, the source(s) of such contamination, the extent of such contamination, the cause and timing of harm, and the resulting damage (measured in diminution of property value) are all questions that will require plaintiff-by-plaintiff scrutiny.”). Thus, in a class action, Randall Bush and Ronald Tolle could not “substitute evidence of exposure of actual class members with evidence of hypothetical, composite persons in order to gain class certification.” *Gates v. Rohm & Haas Co.*, 655 F.3d 255, 266 (3d Cir. 2011).

Nor can Bush and Tolle do so here, in a non-class setting. That is because “[a]verages or community wide estimations would not be probative of any individual’s claim because any one class member may have an exposure level well above or below the average.” *Id.* The same holds true for exposures to people’s individual properties.

The Sixth Circuit’s decision in *Baker* proves this point. *See* 533 F. App’x at 523-24. *Baker* involved a bellwether trial in which the plaintiffs alleged that a crude oil refinery in Hooven, Ohio had contaminated their properties. *See id.* at 511. Their expert opined generally that homes in their tiny village were contaminated, but he gave no “specific evidence” that any plaintiff’s land “had experienced [soil] vapor intrusion.” *Id.* at 517.

The district court excluded this testimony, and the Sixth Circuit affirmed. The appellate panel ruled that “[b]ecause this is not a class action, the district court correctly required plaintiffs to offer sufficient evidence showing the presence of subsurface contamination or soil vapors originating from the plume *on each and every property involved in this case.*” *Id.* at 524

(emphasis added); *see also Gates*, 655 F.3d at 261 (affirming exclusion of expert analysis because it “represented an average exposure, not the exposure of any actual class member”). The Sixth Circuit held that the expert’s opinion in *Baker*—that “vapors were vaguely present ‘in Hooven’”—was too “speculative.” 533 F. App’x at 523.

The same reasoning applies here. Dr. Rutchik opines that people who experience average exposure levels for ten years or more will suffer harm to their health. But that opinion gives no information specific to Randall Bush, Ronald Tolle, or their residences. Instead, what Dr. Rutchik had to do was assess the particular exposure levels at those men’s homes and then opine whether those levels could—and did—cause harm. Dr. Rutchik failed to do that, so the Court should exclude his testimony.

B. Dr. Rutchik’s Proposed Testimony Is Not Sufficiently Connected to the Facts of the Case.

Under Fed. R. Evid. 702, an expert’s testimony must be “based on sufficient facts or data[.]” Here, Dr. Rutchik’s opinion is based on forecasts by another expert, Lance Traves, about emissions of *all* manganese particulates. But not all manganese emissions are created equal. Rather, for toxicological purposes, the air-borne manganese particulates that matter most are those that are small enough to be respirable.

Tiny particulates “are capable of penetrating the lung tissue, while larger [ones] become trapped in the nasal and pharyngeal passages and do not penetrate the lung tissue, where they can enter the circulatory system[.]” [Beck Report 30, App. 129.] The respirable size of particulates is typically considered to be between 2.5 and 4.0 micrometers (μm), also expressed as $\text{PM}_{2.5}$ and $\text{PM}_{4.0}$. [*Id.* at 37, App. 136.] A larger size of 10 μm (PM_{10}) is “larger than what is considered respirable,” but that is “still a better estimate of respirable [manganese]” than is total suspended particulates (TSP). [*Id.* at 55, App. 154.]

The problem for Dr. Rutchik is that Lance Traves did not “specifically adjust [his] modeling to control for . . . the respirable fraction” of total manganese particulates. [Deposition of Lance Traves (“Traves Dep.”) 344:15-21, App. 477; Suder Report 6-12, App. 67-73.] That invites “significant overestimates of respirable dust emissions,” perhaps by a factor of 30. [Suder Report 13, App. 74.] Lance Traves himself admits that “the TSP amount would not be the appropriate reference for assessing health effects[.]” [Traves Dep. 340:25-41:5, App. 476-77.] Thus, Dr. Rutchik based his opinion on inflated emissions numbers that do not control for respirable-sized particles, a critical toxicological consideration. That lack of sufficient data renders Dr. Rutchik’s opinion inadmissible.

C. Dr. Rutchik’s Opinion Fails the Reliability Standards in Fed. R. Evid. 702.

To be admissible, expert testimony must be “the product of reliable principles and methodology” and the expert must have “reliably applied those principles and methods to the facts of the case.” FED. R. EVID. 702. Here, Dr. Rutchik drew upon two principal sources of authority: (i) the U.S. EPA’s reference concentration for manganese; and (ii) eight scientific articles he claims support his opinion. [Rutchik Report 3, App. 3.] Dr. Rutchik did not apply the reference concentration in a reliable manner and the articles he relies upon do not support his conclusion.

1. The EPA’s Reference Concentration.

Dr. Rutchik claims that the EPA’s reference concentration for manganese ($0.05 \mu\text{g}/\text{m}^3$) is a number “below which there is no harm to a human, per se, and at which or above which there is harm to a human.” [Rutchik Dep. 91:11-15, App. 372.] But Rutchik is wrong. Reference concentrations do not work like that.

The manganese reference concentration was derived in 1993 and “has not been reviewed or updated in more than 20 years.” [Beck Report 29, App. 128.] The EPA settled on that

concentration based on a scientific study that found the “lowest observed adverse effect level” in humans to be 50 $\mu\text{g}/\text{m}^3$. [*Id.* at 29-30, App. 128-29.] To account for limitations in the study, as well as for sensitive members of the population, the EPA reduced that number by a factor of 1000 (to 0.05 $\mu\text{g}/\text{m}^3$). [*Id.*] So the reference concentration was designed to include a very large safety zone and to be over-protective.

The EPA makes clear that its reference concentrations have limited purposes. Those numbers, the EPA states, “**can be used to estimate a level of environmental exposure at or below which no adverse health effect is expected to occur.**” [IRIS Limitations 1, App. 580.] A reference concentration is “an estimate (with uncertainty spanning perhaps an order of magnitude) that is likely to be without appreciable risk of deleterious effects during a lifetime.” [*Id.*] And “due to the numerous uncertainties involved in risk assessment,” a reference concentration “cannot be validly used to accurately predict the incidence of human disease or the type of effects that chemical exposures have on humans.” [*Id.*] In other words, proof that a reference concentration was exceeded does not necessarily mean that that emission level was harmful to anyone’s health.

Those considerations have led courts to reject attempts, like Plaintiffs’ here, to use regulatory limits as a shorthand gauge for tort liability. For example, in *Baker*, the district court excluded the testimony of the plaintiffs’ expert “to the extent that [he] relies on the fact that Plaintiffs’ illnesses were caused because they were exposed to benzene in excess of regulatory levels[.]” 680 F. Supp. 2d 865, 880 (S.D. Ohio 2010), *aff’d*, 533 F. App’x at 519-21. “Although the positions of regulatory policymakers are relevant, their risk assessments are not necessarily conclusive in determining what risk exposure presents to specified individuals.” *Gates*, 655 F.3d at 268.

In this case, Dr. Rutchik improperly applies the reference concentration as a litmus test, whereby anything above it is “harmful to human health.” [Rutchik Dep. 93:13-16, App. 372.] That principle is demonstrably faulty, and the Court should therefore exclude his testimony.

2. *Dr. Rutchik Relies on Scientific Studies That Do Not Fit.*

Part of the Court’s analysis under *Daubert* includes deciding whether “the studies upon which the experts rely [are] not sufficient, whether individually or in combination, to support their conclusions[.]” *Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 146-47 (1997). Dr. Rutchik bases his opinion on general causation upon eight epidemiological studies. [Rutchik Report 2-3, App. 2-3.] Each of these studies, however, presents problems of “fit,” both with respect to type of exposure and effects reported. None of them, individually or collectively, supports his opinion.

a) **Kim, *et al.* (2011), Motor function of adults of an Ohio community with environmental manganese exposure [App. 514-22].**

The aim of this study was “to evaluate motor function in order to assess the effects of long-term, low-level environmental manganese (Mn) exposure in residents of an Ohio community where a large ferro- and silico-Mn smelter has been active for more than 50 years.” [Kim Study 606, App. 514.] In this study, the researchers made clear how questionable and tenuous their ultimate findings were. Some of their results, they said, “may possibly reflect early subtle effects of chronic low-level Mn-air exposure” **but those effects “might also be due to chance.”** [*Id.* at 613, App. 521 (emphasis added).] In the end, the researchers concluded that “the cross-sectional study design, the small to medium effect sizes, and the little biological plausibility are limiting the possibility of a causal relationship between the environmental Mn-air exposure and the early subclinical neuro-toxic effects observed.” [*Id.* at 613, App. 521.] To reach “conclusive results[.]” they would need “a larger sample size” and “higher environmental

Mn exposure.” [Id.] Thus, the scientists in the Kim study did not view their own findings as particularly reliable. Their assessment should prevail over that of Dr. Rutchik.

b) Haynes, *et al.* (2010), Environmental manganese exposure in residents living near a ferromanganese refinery in Southeastern Ohio [App. 507-13].

This was not a study to assess health effects. Rather, it was a “pilot study conducted in Marietta, Ohio, with the objective of correlating modeled [manganese] concentration with blood or hair levels of [manganese].” [Beck Report 54, App. 153.] Notably, the authors “did not collect health effect information as part of this pilot study.” [Id.] In fact, the authors went out of their way to discuss “potential limitations” in their findings and to caution that their “modeled results should be interpreted carefully when associating health effects with exposure.” [Haynes Study 473, App. 512.] One of the main limitations is that their modeling “does not include emission particle size.” [Id.] That is problematic because “the biological dose of inhaled [manganese] will depend upon the inhalable fraction of particles.” [Id.] Accordingly, the Haynes study does not furnish a reliable basis for Dr. Rutchik’s opinion.

c) Bowler, *et al.* (2012), Anxiety affecting Parkinsonian outcome and motor efficiency in adults of an Ohio community with environmental airborne exposure [App. 494-506].

This was a cross-sectional study in which 100 residents from Marietta, Ohio, were compared to 90 residents of Mt. Vernon, Ohio, for differences in “anxiety, motor efficiency, and postural sway[.]” [Beck Report 55, App. 155.] Marietta is “a previously identified community with elevated [manganese-air levels] from industrial emissions.” [Bowler Study (2012) 393, App. 494.] Mt. Vernon, by contrast, has low manganese levels that are “not of concern.” [Bowler Study (2012) 393, App. 494.]

The study yielded weak and limited results. According to the authors, “[t]he comparison of two Ohio towns for potential exposure to and health effects of airborne manganese found that

[levels of manganese in blood], questionnaire, neurological assessment and neuropsychological test results *did not differ between towns.*” [Bowler Study (2012) 405, App. 506 (emphasis added).] So there is no dose-response relationship between manganese exposure and any medical issue.

The only difference the researchers found was that Marietta residents scored higher for “generalized anxiety[.]” [*Id.* at 504 (emphasis added).] But that finding was questionable. “At this stage, it is not yet possible to discern whether increased generalized anxiety in Marietta residents reflects a direct neurotoxic effect of environmental airborne [manganese] exposure or whether it is related to the **perception** that the overall air pollution at Marietta might represent a health hazard.” [*Id.* at 402, App. 503 (emphasis added).] Accordingly, these results lack sufficient reliability to bear out Dr. Rutchik’s view.

d) Willis, *et al.* (2010), Metal emissions and urban incident Parkinson disease: A community study of Medicare beneficiaries by using geographic information systems [App. 564-570].

This was a study that compared the incidence of Parkinson’s Disease in U.S. counties based on metal-release data for copper, lead, and manganese. [Willis Study 1357, App. 564.] That data was contained in the U.S. EPA’s Toxic Release Inventory, which companies self-report and “vary in reliability” from “excellent” to “poor.” [Beck Report 53, App. 152.] The study was supposed “to test the hypothesis that living in an urban area with high industrial metal emissions is associated with a higher risk of Parkinson disease.” [Willis Study 1358, App. 565.] As discussed below, this is plainly not reliable support for Dr. Rutchik’s opinions here.

The authors found that “prolonged residence in an urban county with high long-term copper, manganese, or lead release is associated with an increased Parkinson disease incidence and modestly increased risk of Parkinson disease.” [Willis Study 1360, App. 567.] But that

result is broad and says nothing meaningful about risk associated with any specific emissions level. Rather, the authors' conclusion is simply too generalized to have a reliable application under the facts of this case.

For example, the authors admitted that they had no "individual biomarker-proven exposure data, so other risk factors associated with living in these areas may explain the findings." [Willis Study 1361, App. 568.] Thus, the researchers did "not report any estimates of air [manganese] concentrations" and "there is no way to determine the levels of [manganese] to which individuals were exposed." [Beck Report 52, App. 151.] In order to "clarify the proportion of Parkinson disease risk conferred by passive metal exposure[.]" the authors conceded, they would need "more sophisticated environmental heavy metal measurements, exposure modeling, and case confirmation[.]" [Willis Study 1362, App. 569.] So, lacking that additional information, the authors could not—and, indeed, did not—calculate the risk associated with particular emissions levels. Nor is it clear from the study or from Dr. Rutchik's report where Marion County (population 65,720) would fall on the continuum of urban to rural. *See* UNITED STATES CENSUS BUREAU STATE & COUNTY QUICKFACTS (2015), <http://quickfacts.census.gov/qfd/states/39/39101.html>. The same is true for the amount of Toxic Release Inventory emissions reported for Marion County. The absence of answers to those questions make Dr. Rutchik's reliance on the Willis study nothing more than speculative.

Finally, data in the Toxic Release Inventory "do not correlate directly with air concentrations in the local environment." [Beck Report 53, App. 152.] Reasons for that include the wide variation in the reliability of those data and the fact that those raw numbers "do not account for the specifics of how these emissions disperse over a given area and distance to

yield concentrations in air the people would breath[.]” [Beck Report 53, App. 152.] The Willis study, therefore, furnishes no reliable ground for Dr. Rutchik’s opinion.

e) **Rugless, *et al.* (2014), Childhood exposure to manganese and postural instability in children living near a ferromanganese refinery in southeastern Ohio [App. 555-563].**

This study attempted to determine “whether there was an association between ambient [manganese] exposures of 55 children in the Marietta community and postural instability.” [Beck Report 55, App. 154.] The researchers said they found “significant associations between [manganese] exposure, as measured by hair [manganese] concentration and proximity to the [local ferro-manganese] refinery, and postural balance in children.” [Rugless Study 75, App. 559.]

For several reasons, these findings are unreliable for determining a causal association between manganese and the test measurements. First, the authors used a cross-sectional methodology, which is the “least reliable form of epidemiology studies[.]” [Beck Report 14-15, App. 113-14.] Cross-sectional studies provide a snapshot of subject’s exposure and disease state at one point in time, and the subject’s exposure at the time of the study may have little correlation to their exposure status when the adverse health effect began. [*Id.*] See *Amorglianos v. Nat’l R.R. Passenger Corp.*, 137 F. Supp. 2d 147, 168 (E.D.N.Y. 2001) (noting that, due to “inherent limitations” in cross-sectional studies, they “usually represent preliminary or pilot investigations used to screen for possible workplace hazards or to generate hypotheses for testing in more complex designs”). Because the investigators measure the exposure and outcome at one point in time, it is impossible to establish temporality (*i.e.*, cause and effect) between the exposure and the outcome. [Beck Report 14-15, App. 113-14.] For this reason, cross-sectional studies do not provide adequate information to determine whether there is a true causal relationship between a contaminant exposure and health effects. [*Id.*]

These authors fully admit that weakness. They noted that, “[g]iven the cross-sectional study design, this study cannot support a conclusion that the observed gross motor function deficits observed in this study are attributable to recent or early life exposure to airborne [manganese].” [Rugless Study 78, App. 562.] In other words, Dr. Rutchik tries to use this study in a way the authors themselves expressly disavowed.

Second, the researchers did not compare information from an unexposed control group. Nor did they address “whether postural balance measurements for the 55 children were within the normal range for such measurements.” [Beck Report 55, App. 154.] Those comparisons are critical given the very low levels of manganese they measured in the ambient air ($0.011 \mu\text{g}/\text{m}^3$). [Rugless Study 75, App. 559 (identifying measured level as $11 \text{ ng}/\text{m}^3$, which converts to $0.011 \mu\text{g}/\text{m}^3$).] According to the U.S. EPA, the nationwide “average concentration of manganese in urban air . . . is approximately $0.04 \mu\text{g}/\text{m}^3$ [.]” U.S. EPA, INHALATION HEALTH EFFECT REFERENCE VALUES FOR MANGANESE 1 (2012), App. 583.] Thus, these authors claim to have found a health association at a level *nearly four times lower* than the national average for all urban air. That sort of sweeping conclusion is highly questionable in any context—much less as part of a limited-value, cross-sectional study.

Third, the authors did not control for wind direction or wind speed from the refinery. Those factors, the researchers concede, are “significant variables when predicting personal air [manganese].” [Rugless Study 77, App. 561.] That failing further erodes the already weak nature of the study.

In sum, the Rugless report suffers from multiple unsound bases, any one of which renders the authors’ findings unreliable.

f) **Lucchini, *et al.* (2007), High prevalence of Parkinsonian disorders associated to manganese exposure in the vicinities of ferroalloy industries [App. 523-535].**

This study tested whether there is an association between: (i) the prevalence of Parkinsonian disorders among residents of an Italian province; and (ii) those individuals' proximity to four ferroalloy plants. The ultimate results, the authors explained, were "not conclusive[.]" [Lucchini Study (2007) 798, App. 533.] At most, their results "support the hypothesis that prolonged exposure to low levels of [manganese] beginning from very early stages of life (and possibly pre-natal), can increase the risk of Parkinsonian disorders." [*Id.*]

Due to the study's design limitations, that generalized hypothesis cannot be extrapolated to any specific exposure level. Rather, this was "a comparison of disease rates between communities" and "not a direct measure of effect or association." [Beck Report 56, App. 155.] "[W]ithout individual exposure measurements," the study "cannot be used to draw conclusions about associations between [manganese] exposure and health effects beyond the specific communities evaluated." [*Id.*] That means the study does not enable Dr. Rutchik to link exposure levels at the Bush or Tolle properties to alleged harm.

More importantly, the authors' conclusions squarely refute Dr. Rutchik's opinion. According to Dr. Rutchik, residents of the Class Area will suffer harm to their health if they live there continuously for ten years or more. [Rutchik Report 3, App. 3.] The Lucchini group examined four ferroalloy plants, three of which were shuttered, but had previously operated "for about a century[.]" [Lucchini (2007) 796-97, App. 531-32.] The fourth plant was still operating, but did not open until the 1970s. [*Id.*] Unlike the other three plants, the researchers found "no elevated [disease incidence]... in the vicinity" of that fourth facility. [*Id.* at 793, App. 528.] A possible explanation for that difference, the authors noted, was that, for residents near the fourth plant, there may not have been "sufficient latency for the development of Parkinsonian

disturbances.” [Lucchini (2007) 797, App. 532.] So the study does not create a reliable association for exposure periods of less than 30 years.

Further hampering the usefulness of this study is its reliance on dust samples as measures of manganese exposure. [*Id.* at 791, App. 526 (“Dust was sampled and collected by brushing marble window sills on the ground floor of houses located in residential areas.”).] Here, Dr. Rutchik relied only on “the ambient air data” and not on any settled dust data. [Rutchik Dep. 76:22-25, 85:3-20, App. 368, 370.] Neither the study itself nor Dr. Rutchik suggests any means of correlating the Italian dust samples to modeled or measured air data for Marion. [*See* Lucchini Study (2007) 797, App. 532 (indicating that reliability of dust samples as surrogate for manganese air exposure might fail near the fourth plant, which had better “dispersion of particulates” and that “may explain the lack of increased prevalence in the vicinity of this plant”).] That severs any tie between the study’s results and the data upon which Dr. Rutchik relied. So, despite whatever utility the study might otherwise have, Dr. Rutchik did not reliably apply its results to the facts of this case.

g) Lucchini, *et al.* (2012), Tremor, olfactory, and motor changes in Italian adolescents exposed to historical ferromanganese emission [App. 536-545].

This was a cross-sectional study designed to “assess neurological functions in adolescents from the impacted region [of Valcamonica, Italy] and the reference area of [nearby] Garda Lake.” [Lucchini Study (2012) 687, App. 536.] The researchers gauged manganese exposure by measuring the subjects’ air, soil, tap water, blood, urine, and hair. [*Id.*] The personal air samplers from the study showed a mean manganese air concentration of 0.049 $\mu\text{g}/\text{m}^3$ in the exposed area and 0.027 $\mu\text{g}/\text{m}^3$ in the unexposed area. [*Id.* at 691, App. 540 (Table 1a, converted from nanograms per cubic meter (ng/m^3)).]

The authors found “[n]o association” between those levels of airborne manganese and any adverse health effects. [*Id.* at 693, App. 542.] They did find associations for various non-air tests (like soil, for example), but since Dr. Rutchik considered only air measurements, those other results cannot support his conclusion. [Rutchik Dep. 76:22-25, 85:3-20, App. 368, 370.] Therefore, his reliance on the study is misplaced.

h) Lucchini, *et al.* (2014), Neurofunctional dopaminergic impairment in elderly after lifetime exposure to manganese [App. 546-54].

This cross-sectional study sought “to assess neurocognitive and motor functions in healthy elderly subjects residing for most of their lifetime in Valcamonica [Italy,] or in a reference area unimpacted by ferroalloy plant activity.” [Lucchini Study (2014) 309, App. 546.] Subjects were tested for levels of manganese and lead in air, soil, blood, and urine. The authors concluded that “[l]ifelong exposure to [manganese] was significantly associated with changes in odor discrimination, motor coordination, cognitive abilities, and [blood] serum PRL levels.” [*Id.*]

This report epitomizes the limits and weaknesses of cross-sectional studies. Again, that research format provides “a snapshot of subjects’ exposure and disease state at one point in time[.]” [Beck Report 14-15, App. 113-14.] Yet “the subjects’ exposure at the time of the study may have little correlation to their exposure status when the adverse health effect began.” [*Id.*]

Here, the authors measured subjects’ ambient air levels based on sampling from a single day, through personal air monitors, sometime in 2013. [Lucchini Study (2014) 311, App. 548.] At that point, the three ferroalloy plants at issue had been closed since 1985, 1995, and 2001, respectively. [*Id.* at 316, App. 553.] The study subjects were “men and women aged 65-75 years” who had lived in the area “since at least the 1970s.” [*Id.* at 310, App. 547.]

As the authors admit, “[t]he subjects’ age and residence histories indicate they likely suffered greater environmental exposures over the majority of their lifespan than has likely

occurred over the past decade or so since the ferro-manganese operations ceased.” [*Id.* at 316, App. 553.] In other words, the one-day air samples from 2013 are not reliable indicators of the alleged risk to which the subjects were exposed over the course of 40 years. Rather, those people may well be exhibiting health effects they developed as a result of higher exposures they endured decades ago and the current air numbers may have no causal relation to those effects. The study cannot tell us one way or the other.

Indeed, an earlier study by the same authors, on adolescents in this region, found “[n]o association” between levels of airborne manganese and any adverse health effects. [Lucchini Study (2012) 693, App. 542.] The researchers’ air-monitoring results from 2013, therefore, have little to no causal reliability. And “there is simply too great an analytical gap between the data and the opinion offered.” *Nelson v. Tenn. Gas Pipeline Co.*, 243 F.3d 244, 254 (6th Cir. 2001).

Also, the levels at which the authors claim to have found associations are so low as to be highly suspect. For example, the authors say they identified an association between adverse health effects and mean manganese levels in the exposed group of 0.026 $\mu\text{g}/\text{m}^3$ (puzzlingly, the unexposed group had comparable levels of 0.021 $\mu\text{g}/\text{m}^3$). [Lucchini Study (2014) 313, App. 550 (Table 2, converted from nanograms per cubic meter).] The level of the exposed group is *almost half* the U.S. EPA’s reference concentration (0.05 $\mu\text{g}/\text{m}^3$), which is supposed to represent a level “at or below which no adverse health effect is expected to occur.” [IRIS Limitations 1, App. 580.] More current science indicates the level of safe, long-term manganese exposure at more than six times that—0.3 $\mu\text{g}/\text{m}^3$. [Beck Report 30, App. 129.]

Worse yet, the average concentration of manganese in urban air for the entire United States is 0.04 $\mu\text{g}/\text{m}^3$ —a third higher than the exposed group from this study. U.S. EPA, INHALATION HEALTH EFFECT REFERENCE VALUES FOR MANGANESE 1 (2012), App. 583 (stated

in terms of PM₁₀ size measurement, like the Lucchini Study (2014)).] So, at this point, an alleged health association at levels indicated in the study levels is speculative and contrary to prevailing scientific views. “Law lags science; it does not lead it.” *Tamraz*, 620 F.3d at 677.

Equally speculative is the manner in which these elderly Italians presently experience exposure to airborne manganese. The nearby industrial plants closed decades ago, so they are no longer emitting manganese particulates. The subjects’ personal air monitors measured predominately *indoor* air (an average of 19 hours indoors versus 5 hours outdoors). [Lucchini Study (2014) 312, App. 549.] So where is the measured airborne manganese coming from? The authors speculate that “much of the airborne [manganese] may be attributed to re-suspended dusts that have been cumulatively impacted by the ferromanganese plant emissions over decades.” [*Id.*] That may be a plausible hypothesis, but the authors did not test it and nothing in the study establishes a reliable foundation for it. As a result, Dr. Rutchik cannot reliably apply the air results from this study to the facts of this case.

For all of these reasons, Nucor Marion’s motion to exclude Dr. Rutchik’s general causation opinion with respect to Plaintiffs’ unidentified chronic conditions should be granted.

D. Dr. Rutchik’s Opinion Rests on Alleged Damages That Are Now Time-barred.

According to Dr. Rutchik, residents of the Class Area will suffer harm to their health if they live there continuously for ten years or more. [Rutchik Report 3, App. 3.] Plaintiffs’ claims for trespass and nuisance carry four-year statutes of limitation. *See* OHIO REV. CODE § 2305.09(A) & (D). Plaintiffs filed this lawsuit on December 26, 2012. That means the applicable period of recovery began four years before then (on December 26, 2008) and extends to today. *See, e.g., Nieman v. NLO, Inc.*, 108 F.3d 1546, 1559 (6th Cir. 1997) (finding that, for claim of “continuing trespass” under Ohio law, plaintiff could “only claim damages incurred

within the four years prior to filing the lawsuit”). That makes Plaintiffs’ recovery timeframe almost seven years long—three short of Dr. Rutchik’s opinion.

So, in order for Randall Bush and Ronald Tolle to avail themselves of Dr. Rutchik’s report, they would have to rely in part on damages that accrued outside the existing limitations period. Because Plaintiffs cannot do that, Dr. Rutchik’s opinion would not help the jury and his testimony should therefore be excluded.

II. THE COURT SHOULD LIMIT THE TESTIMONY OF PLAINTIFFS’ EMISSIONS EXPERT, LANCE TRAVES.

Plaintiffs were supposed to produce their expert reports no later than June 15, 2015. [Doc. No. 58.] After several excuses, deadline extensions, and a hearing on the matter, Plaintiffs produced their final expert report prepared by Lance Traves, an environmental consultant, on July 20, 2015. Although Fed. R. Civ. P. 26(a)(2) and this Court’s July 17, 2015, Order [Doc. No. 60] required Plaintiffs to produce a “complete statement” of Traves’s expert opinions along with the facts and data he considered in rendering his opinions, Traves proffered brand new opinions during his recent deposition and greatly expanded upon existing opinions. Fed. R. of Civ. P. 37(c) requires “automatic and mandatory” exclusion of expert opinions that are not provided in accordance with Fed. R. Civ. P. 26. *Dickenson v. Cardiac & Thoracic Surgery of E. Tenn.*, 388 F.3d 976, 983 (6th Cir. 2004). For the reasons set forth below, Traves’s new *ipse dixit* and noticeably unreliable and skewed opinions should be excluded.

A. Traves’s Belated Deposition Opinions Should Be Excluded.

Traves’s new opinions and the supporting facts and data were not included in his July 20, 2015, expert report or subsequently provided until Plaintiffs’ medical expert’s deposition went poorly. Traves readily admits, “[Y]es, I have since July 20th reviewed additional information, as I discussed, and have even further expanded opinions.” [Traves Dep. 165:21-23,

App. 433.] Traves's new opinions relate to alleged adverse health effects and purported physical damage to the structures on residential properties. [Traves Dep. 74:24-75:7, 111:20-25, App. 410, 419.] The tables below compare Traves's deposition testimony with his report.

Quotes Related to Adverse Health Effects or Public Health Concerns

Traves's Deposition Testimony	Traves's Expert Report
I would say I am expressing an opinion that the emissions from Nucor plant in regards to manganese into the surrounding area, which we identify with the .07 manganese ambient air concentration contour, is above the health-based annual reference concentration <u>and that those people, as a result, have a health-based concern.</u> [Traves Dep. 69:5-12), App. 409 (emphasis added).]	The Nucor Marion Plant is the source of air pollutant emissions that have resulted in concentrations of manganese in the ambient air at plaintiff properties exceeding the [USEPA's] health-based annual reference concentration (RfC) of .05 [ug/m ³] and a current Ohio EPA 1-hour air toxics threshold. [Traves Report 1, App. 23.]
Q. So let's be clear. You are not rendering any opinions that anyone in this case will suffer adverse health effects as a result of manganese; is that correct? *** A. That would not be correct... [Traves Dep. 74:2-7, App. 410 (emphasis added).]	Furthermore, these Nucor results demonstrate that ambient air concentrations of manganese above health-based threshold have been impacting the area surrounding the plant that includes but is not limited to the plaintiff properties for more than a decade. [Traves Report 18, App. 40.]
[I] think that's a pretty strong case to say since you're 10 times higher than the established standard to prevent public health impacts, that I would say that they—those parties, if they are in a location for a long period of time, under the scientific literature, could be— <u>could expect to have adverse effects.</u> [Traves Dep. 75:1-7, App. 410 (emphasis added).]	In my opinion, the results of LMG's air dispersion modeling further demonstrates that the Nucor Marion Plant is the source of the elevated "hot-spot" concentrations of manganese in the ambient air that exceed the applicable health-based inhalation standards at plaintiff and other properties in the area surrounding the plant. [Traves Report 24, App. 46.]
[I]f you're, you know, exposed at 10 times that health-based threshold, <u>there is a 10 times higher likelihood that you're going to have a potential public health impact.</u> [Traves Dep. 80:10-14, App. 411 (emphasis added).]	

Quotes Related to Physical Property Damages to Structures

Traves's Deposition Testimony	Traves's Expert Report
<p>[M]y consultants and personally myself on the first sampling round did see evidence of <u>particulate deposition and discoloration</u> and what I would consider to be, based on my past experience, damages potentially to physical property. [Traves Dep. 109:6-10, App. 419 (emphasis added).]</p>	<p>It is my opinion that the large quantity of manganese air emissions ... ha[ve] clearly resulted in adverse impacts to the ambient air, surface soils, and structures at properties in the area surrounding the plant. [Traves Report 4, App. 26.]</p>
<p>It basically is an oxidizing agent if it's left on a painted surface or anything that's got a metal component. So if you're not removing that on a regular basis, <u>that actually will, in my opinion, result in damages to that material.</u> [Traves Dep. 109:17-21, App. 419 (emphasis added).]</p>	<p>As a result, these future manganese emissions will result in ongoing adverse impacts on these properties and local ambient air quality in the area surrounding the plant. [Traves Report 4, App. 26.]</p>
<p>I was physically present during sampling of homes that were directly adjacent to the rail spur that lines up with Nucor and their EAF, and <u>I</u> physically observed what I would say <u>in my expert opinion is direct particle deposition from Nucor</u> that was <u>impacting</u> at least <u>selected homes on their—on their exterior walls</u>... [Traves Dep. 115:5-12, App. 420 (emphasis added).]</p>	
<p>Q. So it's only that it could occur if it's not clean; that's what you're saying?</p> <p>***</p> <p>A. No, my expert opinion would be that it will occur if you do not take preventative measures.</p> <p>If you do not take preventative measures to remove manganese deposition particulates onto vehicles, that manganese deposition particle will eventually cause pitting and other things, which is demonstrated by the scientific literature. [Traves Dep. 143:24-44:8, App. 427.]</p>	

The comparison at the very least, identifies a substantial expansion in Traves's opinions. There is no way to construe Traves's report as a "complete statement" of all his opinions including all the "facts or data considered ... in forming them." FED. R. CIV. P. 26(a)(2)(B).

The facts surrounding this Court's decision to exclude expert opinions in *Cooley v. Lincoln Elec. Co.* are similar to the facts *sub judice*. There, an expert report was permitted to be filed after the original deadline. *Cooley v. Lincoln Elec. Co.*, 693 F. Supp. 2d 767, 775 (N.D. Ohio 2010). During that expert's deposition, he rendered opinions outside those proffered in his expert report. *Id.* at 775-76. This Court held, "Having failed to offer these opinions in his written report, [the expert] was not allowed to offer them at trial." *Id.* Similarly, Traves should not be permitted to render his belatedly new opinions here.

Traves's new opinions are not only untimely, they have not yet been fully formed. [Traves Dep. 76:16-78:2, App. 410-11 ("I'm not prepared to express that opinion [about adverse health effects] right now."); *id.* at 143:19-23, 144:12-15, App. 427 (stating that his opinion about physical property damage is still indeterminate because he has not been "advised or requested to do that study"). Traves admittedly incomplete opinions further prejudices Nucor Marion and all but blocks its ability to develop contrary evidence.

1. Plaintiffs' Failure to Disclose Traves's Budding New Opinions Was Not Justified or Harmless.

Plaintiffs were not justified and their actions were not harmless due to the tight case deadlines and looming trial date. Plaintiffs admit, "From the outset of this case, Mr. Traves has been acting as Plaintiffs' 'consulting' expert" [Doc. No. 59.] Because Traves's consulting, data collection, and air modeling ensued at the outset of this case, Plaintiffs cannot reasonably justify their failure to disclose Traves's complete opinions in July 2015. Furthermore, the untimely expert disclosure unfairly inhibits Nucor Marion's ability to properly prepare; this will

unnecessarily prolong litigation, which undermines the Court's management of the case.

This Court recognized the serious potential for prejudice Traves's expert opinion posed to Nucor Marion in July. [See Doc. No. 60.] The Court explicitly stated Nucor Marion would be entitled to "re-raise its prejudice argument" if Traves's report warranted it. *Id.* The prejudice related to Traves's opinions befell Nucor Marion during his deposition—two months after his expert report was produced. Plaintiffs plainly ambushed Nucor Marion with Traves's nascent opinions at that point. That timing stripped Nucor Marion of its ability to procure an expert on these issues and deprived it of sufficient time to prepare its case. Accordingly, Traves's belated deposition opinions should be excluded.⁵

B. Traves's Unqualified, Speculative, and Unreliable Deposition Opinions Should Be Excluded Under Fed. R. Evid. 702 and the Gatekeeper Requirements of Daubert.

Federal Rule of Evidence 702 lays the groundwork for determining the admissibility of expert opinions. An expert's opinion is admissible under that rule if three requirements are met: (1) "the witness must be qualified by knowledge, skill, experience, training, or education," (2) "the testimony must be relevant, meaning that it will assist the trier of fact to understand the evidence or to determine a fact in issue;" and (3) "the testimony must be reliable." *Burgett v. Troy-Bilt LLC*, 579 F. App'x 372, 376 (6th Cir. 2014).

The preliminary determination under Fed. R. Evid. 702 is the qualification requisite. *See Hamilton v. Menard, Inc.*, No. 3:10-CV-1997, 2012 U.S. Dist. LEXIS 139519, at *16 (N.D. Ohio Sept. 27, 2012). Expert opinions are only permitted when the expert possesses sufficient knowledge, skill, experience, training, or education related to the specific subject of the opinion. *See Smelser*, 105 F.3d at 303. To make this determination, the witness's qualifications cannot be

⁵ If Traves's new opinions are not excluded, Nucor Marion should be permitted to conduct further discovery and an opportunity to provide rebuttal expert testimony.

examined in the abstract; they must be examined to determine “whether those qualifications provide a foundation for the witness to answer a specific question.” *Id.* at 303. “An expert may be highly qualified to respond to certain questions and to offer certain opinions, but insufficiently qualified to respond to other, related questions, or to opine about other areas of knowledge.” *In re Welding Fume Prods. Liab. Litig.*, No. 1:103-CV-17000, 2005 U.S. Dist. LEXIS 46164, at *33 (N.D. Ohio Aug. 8, 2005). Here, Traves’s purported expertise fails to qualify him to opine about health-based issues or physical property damage. Accordingly, Traves’s yet-to-be-completed opinions related to these issues should be excluded.

1. Traves Is Unqualified to Render Health-Based Opinions.

Traves is not a toxicologist nor a medical doctor; he has no relevant training in either field. [Traves Dep. 35:1-15, App. 400.] Traves holds himself out as a “professional environmental consultant,” and he can identify no cases where he has rendered health-based opinions. [Traves Dep. 12:6-7, App. 394.] Nevertheless, Traves intends to offer testimony related to health-based concerns, potential health-effects, and the likelihood of adverse health effects related to manganese that were not previously identified. [Traves Dep. 68:7-12, 69:5-24, 70:16-20, 94:14-18, App. 408, 409, 409, 415.] Indeed, Traves claims his experience in risk assessment and exposure assessment qualify him to render these opinions. [Traves Dep. 22:4-7, 32:10-33:4, App. 397, 399-400.] However, he readily admits that he is not an expert in “the toxicology component” of risk assessments, which is exactly what he is now attempting to opine on. [Traves Dep. 22:4-7, App. 397.]

Traves’s new opinions and testimony should be seen for what they are—a transparent attempt to bolster the Plaintiffs’ causation arguments to demonstrate “substantial” and “physical harm.” Despite his knowledge, skill, experience, training, and education, he is “insufficiently

qualified” to render the health-based opinions. *See In re Welding Fume Prods.*, 2005 U.S. Dist. LEXIS 46164, at *33. Accordingly, this Court should preclude these newly announced opinions because they are beyond his area of expertise.

2. *Traves Is Unqualified to Offer Physical Property Damage Opinions.*

Traves’s experience overwhelmingly relates to environmental compliance and permitting. In an attempt to demonstrate his qualifications to render the physical-property-damage opinions, he indicates “there is a lot of literature out there in regards to ... metal emissions and other industrial emission impacts on building materials.” [Traves Dep. 143:3-10, App. 427.] He vaguely identifies one study, which was not referenced in his report, but he could not identify it by name. [Traves Dep. 89:5-11, App. 414.] Without any testing or ability to identify a supporting study, Traves attributes common discoloration and dust observed while collecting soil samples to Nucor Marion.⁶ [Traves Dep. 109:5-10, App. 419.]

Traves could not recall the residences that allegedly displayed discoloration or dust, but he believes they were “some homes along Whitmore Avenue.” [Traves Dep. 120:25-21:8, App. 421-422.] Neither Bush nor Tolle lives on that street. Traves further asserts without any authority that manganese can act as an oxidizing agent when deposited on metallic or painted surfaces. [Traves Dep. 109:17-19, App. 419.] Potential “pitting and other things” are additional physical property damage opinions offered by Traves. [*Id.* at 144:4-8, App. 427.]

In any event, Traves did nothing to measure or confirm his observations. He did not perform any testing as to the actual cause of the discoloration or pitting he saw; he did not identify any particular properties that had discoloration or structural damage; he took no samples

⁶ Traves admits he never took samples, tested, or even investigated the “discoloration.” [Traves Dep. 115:22-23, 145:15-16, App. 420, 428.] Not only did Traves fail to determine the cause of the discoloration or test it for its manganese concentration, he failed to rule out other possible sources.

of dust on any exterior surfaces; he never tested the composition of dust on any exterior surfaces; he did not rule out possible alternative sources of dust contamination; and he took no pictures for purposes of identifying damage to personal property. [Traves Dep. 113:15-25, 115:13-23, 121:9-23, 145:11-16, 155:24-56:2, App. 420, 420, 422, 428, 430.]

Traves' property damage opinions aimed to strengthen Plaintiffs' damages claim must not be countenanced. These opinions significantly deviate from his knowledge, skill, and experience; he is "insufficiently qualified" to render these opinions. *See In re Welding Fume Prods.*, 2005 U.S. Dist. LEXIS 46164, at *33. Accordingly, Traves should be precluded from offering his untimely, unreliable, and untested property-damage opinions.

C. Traves's Methodology Used to Select the Data Underlying the AERMOD Dispersion Model Is Patently Speculative and Unreliable.

The Sixth Circuit does not permit unsupported speculation to be the basis of an expert's opinion; it requires the testimony to rest on a reliable foundation. *In re Scrap Metal Antitrust Litig.*, 527 F.3d 517, 529-30 (6th Cir. 2008). "[A]ny step that renders the analysis unreliable ... renders the expert's testimony unreliable." *Id.* at 530. In this case, Traves's calculations of manganese concentrations are patently unreliable and irrelevant.

Traves's methodology is unmistakably manipulated to calculate the highest possible levels of manganese emissions. To develop his model, Traves uses the AERMOD program which is the US EPA's preferred program for modeling emission dispersions. [Traves Report 24, App. 46.] However, at every step along the way, Traves chose to use the highest possible data to maximize his findings. [Traves Dep. 237:20-38:23, App. 451.]

- Traves uses the 2004 permit data file⁷ as the foundation of his model instead of the 2010 permit data file. [Traves Report 17, 24, App 39, 46.] Nucor did not purchase the facility until 2005. The unaltered dispersion model created by the 2004 file resulted in a one-hour maximum manganese concentration 14 times higher than the unaltered model of the 2010 file. [Traves Report 17, App 39.]
- Traves later decided to update the emission rate and velocity for one of the baghouses to be consistent with a 2012 emission test instead of using the data point from the 2004 permit file. This resulted in an increase of the emission rate to a figure substantially larger than all other comparable sources. [Traves Report 25-26, App. 47-48.]

Traves incorporates other emission sources in his AERMOD dispersion model that were not included in the 2004 permit file. He takes a maximizing approach by incorporating his calculated fugitive emissions from the parking and roadways as well as the slag handling operation. [Traves Report 26, App. 48.] The data selected by Traves for these sources also utilized the highest data points available:

- In calculating fugitive parking and roadway emissions at Nucor Marion, Traves used the highest concentration of manganese found in an “offsite” soil sample—which he later refers to as an “outlier”—instead of using measurements actually taken from the Nucor Marion property. [Traves Report 34, App. 56; Traves Dep. 272:18-23, App. 459.]
- Traves based his fugitive slag handling emissions on a figure he found in an Ohio EPA email—which happens to be a typo—instead of utilizing a figure within the range recognized in peer-reviewed, scientific literature. [*Compare* Traves Dep. 303:24-04:4, App. 467 (indicating 30%), *with* Traves Report 8, fn.8, App.

⁷ This data file was created five months prior to Nucor acquiring the facility, and it was generated to be used in the predecessor software program to the AERMOD program used by Traves. [Traves Report 3, 25, App. 25, 47.] The 2010 data file was generated to be used in the AERMOD program. [Traves Report 17, 24, App. 39, 46.]

30 (indicating 3%-5%).] This resulted in using a figure six times higher than the upper-limit of the scientifically recognized range.

Courts have expressly rejected the practice of skewing calculations to maximize exposures. For example, in *Castellow v. Chevron*, 97 F. Supp. 2d 780 (S.D. Texas 2000), the claim was that benzene from gasoline cause acute myelogenous leukemia (AML). The plaintiffs retained an expert to model the benzene exposure. Based on *Daubert*, the Court rejected the experts opinions in part because, “[he] acknowledged, under cross-examination, that at every opportunity he ascribed a high number to a potential exposure scenario, even when a lower number, within a possible range, was more consistent with the facts, or even more credible.” *Id.* at 791.

Traves’s calculations amount to guesswork, are not science-based, and should not be admitted into evidence under the guise of an expert opinion. Traves’s effort to maximize his emissions data is even more suspect given the existence of actual data that he chose not to use but instead to create a model that is noticeably higher than actual EPA readings at monitors. The Ohio EPA operates several manganese monitors in Marion. [Traves Report 22, App. 44 (providing a table comparing the Ohio EPA monitor results to Traves’s model).] **The average annual manganese concentrations in Traves’s dispersion model were two to six times higher than the actually-measured concentrations at the same location.** [See *id.*] Each Ohio EPA monitor consists of two filters. When selecting values to place in his model, Traves exclusively used the higher of the two filter values instead of taking the lower number or even the mean. [Traves Report 22, App. 44.] Traves’s Table 8 demonstrates the degree to which his arbitrary, subjective, and speculative data manipulation compromised the integrity and accuracy of his model. Such result-driven procedures are anathema to both science and law and should be excluded.

Traves's rank *ipse dixit* stems from a wholly unscientific process that he describes as "conservative" but is plainly not reasonable nor objective. Because Traves's maximizing of calculations is advocacy and not science, his expert opinion that calculates the alleged emissions, and those based on the AERMOD dispersion model, should be excluded as unreliable.

D. Traves's Opinions Related to the Ohio EPA's Beliefs and Conclusions Go Beyond the Permissible Scope of Expert Testimony and Should be Excluded.

Courts recognize that experts expressing "opinions as to the state of mind, intent, or motive of a government, a charitable entity, or a person ... do not contain relevant expert evidence." *Linde v. Arab Bank, PLC*, 920 F. Supp. 2d 282, 285 (E.D.N.Y. 2011); *In re Rezulin Prods. Liab. Litig.*, 309 F. Supp. 2d 531, 547 (S.D.N.Y. 2004) ("Inferences about the intent or motive of parties or others lie outside the bounds of expert testimony."). In *In re Commercial Money Ctr.*, this Court found expert testimony as to an entity's intent or state of mind and the expert's interpretations of document language both fell outside the expert's role. 737 F. Supp. 2d 815, 849 (N.D. Ohio 2010). The portions of that expert's report related to these topics were excluded. *Id.*

Nevertheless, from a few e-mails, Traves claimed to have divined the intent of the Ohio EPA. Section 7.0 of Traves's Report is entitled: "Ohio EPA Communications and Actions **Indicate** that the Nucor Marion Plant is Source of Elevated Manganese Concentrations in the Surrounding [Area]." [Traves's Report 37] (emphasis added). Traves provides opinions as to the Ohio EPA's unstated conclusions and beliefs based on his review of public records; this attempt to opine on the Ohio EPA's state of mind is inadmissible. *See Comm. Money Ctr.*, 737 F. Supp. 2d at 849. Accordingly, this Court should exclude Section 7.0 of Traves's Report and any related opinions proffered during his deposition.

III. THE COURT SHOULD EXCLUDE THE TESTIMONY OF PLAINTIFFS' REAL ESTATE EXPERT, CRAIG CANTRALL.

Craig Cantrall owns Chesnut Hill Realty, Inc., a small metropolitan brokerage that “specialize[s] in luxury homes for sale in Cleveland, Ohio[.]” [CHR Website Materials 3, App. 573.] Although Cantrall has decades of experience marketing high-end properties in Cuyahoga County, he has never “bought or sold a home within a hundred miles” of Marion. [Cantrall Dep. 25:2-5, App. 281.] Nor can he specifically recall ever having set foot in Marion. [Cantrall Dep. 9:5-11, App. 277.]

Nevertheless, Cantrall opines that the issuance of Dr. Rutchik’s report—which asserts that people living in the Class Area for a period of ten years or more will suffer harm to their health—reduces the value of homes in that area of Marion by 30% to 40%. [Cantrall Report 2, App. 21; Cantrall Dep. 62:17-63:15, App. 290.] Cantrall’s opinion “is premised upon what [he] perceive[s] to be the fear of potential buyers[.]” [Cantrall Dep. 16:7-16, App. 278.] Importantly, like Dr. Rutchik, Cantrall offers no opinion specific to the properties of Ronald Tolle or Randy Bush.

The way Cantrall reached his conclusion could hardly have been more subjective and less testable. The man simply canvased the reaches of his mind as part of his “own personal survey” to predict the “emotional aspect” of buying a home in the Class Area. [Cantrall Dep. 76:23-77:25, App. 293.] Cantrall concedes that his approach has “very little to do with, we’ll call them, facts and figures.” [Cantrall Dep. 10:21-11:5, App. 277.] Cantrall did not: (i) conduct an outside survey; (ii) contact Marion realtors to compare that market to the one he knows in Cleveland; (iii) talk to anyone in rendering his opinion; (iv) speak to any Plaintiff; (v) use a multiple regression analysis; (vi) perform a paired-sales analysis; (vii) look at any comparable sales figures; (viii) consult any authoritative documents or materials; (ix) perform any tests or studies

to determine the accuracy of his opinion; (x) premise his findings on quantifiable or empirical data; (xi) identify or locate any market survey that validates his opinion; or (xii) determine any rate of error for his methodology. [Cantrall Dep. 17:13-18:3, 23:25-24:13, 33:14-16, 45:23-25, 80:23-25, 94:11-96:2; App. 279, 280, 283, 286, 294, and 298.]

As a result, Cantrall admits there is no way “to check the accuracy” of his opinion. [Cantrall Dep. 77:15-25, App. 294.] Nor does his generalized opinion apply to any specific residence. For “if [he] were going to opine on each individual home . . . , [he] could only do that by looking at that particular property[.]” which he never did. [Cantrall Dep. 109:9-20, App. 302.] The sole basis for his estimating a generalize 30% to 40% reduction in Marion home values is “what’s the cost of mitigating that circumstance.” [Cantrall Dep. 80:2-19, App. 294.] Yet, paradoxically, Cantrall does not know if the purported contamination of Plaintiffs’ properties “can be mitigated or not[.]” [Cantrall Dep. 95:19-96:2, App. 298.]

A. Cantrall’s Opinion Rests on Nothing More Than His *Iipse Dixit*.

The main factors bearing on the Court’s *Daubert* analysis are: “(1) whether the theory or technique can be or has been tested; (2) whether it has been subjected to peer review and publication; (3) whether there is a known or potential rate of error; and (4) whether the theory or technique enjoys general acceptance in the relevant scientific community.” *Pluck*, 640 F.3d at 677. An expert’s opinion must be “more than subjective belief or unsupported speculation.” *Daubert*, 509 U.S. at 589. Courts should bar opinion evidence that is “connected to existing data only by the *ipse dixit* of the expert.” *Joiner*, 522 U.S. at 146.

Cantrall’s opinion fails all of these factors. His views are not able to be tested; they have not been subjected to peer review or publication; they have no known error rate; and nothing indicates that alleged environmental damages can be reliably determined by surveying one’s own mind. Rather, subjective belief comprises the entirety of Cantrall’s report. Indeed, courts have

excluded the testimony of experts who assessed purported environmental property damage through techniques much more rigorous than those employed by Cantrall. *See Player v. Motiva Enters., LLC*, 240 F. App'x 513, 520 (3d Cir. 2007) (affirming exclusion of appraisal testimony that amounted to “guess work”); *Leese v. Lockheed Martin Corp.*, 6 F. Supp. 3d 546, 558 (D.N.J. 2014) (barring expert testimony because it contained “arbitrary or unreliable factors”); *Younglove v. PSD Dev., LLC*, 782 F. Supp. 2d 457, 465 (N.D. Ohio 2011) (finding environmental stigma testimony to be “too speculative to be admitted”). Here, by contrast, Cantrall did nothing to raise his opinion above the level of pure subjectivity. The Court should therefore exclude his testimony.

B. Stigma Damages Are Not Recoverable in Ohio.

Its fatally subjective nature aside, Cantrall’s opinion also runs afoul of Ohio law. “[P]ure environmental stigma, defined as when the value of real property decreases due solely to public perception or fear of contamination from a neighboring property, does not constitute compensable damages in Ohio.” *Ramirez v. Akzo Nobel Coatings, Inc.*, 791 N.E.2d 1031, 1034 (Ohio Ct. App. 2003); *accord Brown v. Whirlpool Corp.*, 996 F. Supp. 2d. 623, 638 (N.D. Ohio 2014) (finding that “Ohio law does not permit damages for diminished property values caused by environmental stigma”); *Younglove*, 782 F. Supp. 2d at 461 (same). Here, Cantrall professes about manganese-induced stigma damages. Because Ohio law does not recognize the recovery of environmental stygma, the Court should disallow Cantrall’s testimony.

CONCLUSION

For these reasons, the Court should exclude the testimony of Dr. Jonathan Rutchik, Lance Traves and Craig Cantrall. However, if this Court finds that Lance Traves may testify to his maximized calculations, he should still be barred from testifying beyond his expertise and specifically about: (i) adverse health effects from manganese; (ii) physical damage to Plaintiffs' properties; and (iii) the Ohio EPA's intent or state of mind regarding Nucor Steel Marion, Inc.

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing *Motion to Exclude Expert Testimony* was served upon the following this 16th day of October via the Court's CM/ECF service:

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